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The social relativity of digital exclusion: applying relative deprivation theory to digital inequalities

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**The Social Relativity of Digital Exclusion:
Applying Relative Deprivation Theory to Digital Inequalities**

Abstract

Digital inequalities research adopted the idea that exclusion is compound and multi-faceted. Nevertheless, digital exclusion theory and empirical research often takes an individual, static approach; assuming that personal characteristics such as socio-economic status consistently influence how individuals engage with ICTs across different contexts. This paper makes a theoretical contribution by looking at the value of Relative Deprivation Theory (RDT) in understanding digital inequalities. RDT argues that evaluations of personal circumstances depend on social and temporal contexts and are, therefore, relative. Digital inequalities research could benefit from a shift towards this relative approach in both theorization and empirical research by incorporating explanations based on context and social group processes into existing individual and structural explanations of digital inequalities.

Keywords: Digital Divide; Relative Deprivation; Digital Exclusion; Inequalities; Social Comparison

The Social Relativity of Digital Exclusion:

Applying Relative Deprivation Theory to Digital Inequalities

This paper argues that digital inequalities research could benefit from a shift towards a contextual and socially comparative approach in both theorization and research methods applied, moving away from explanations based purely on the individual and socio-economic structures towards social group processes that change from one situation to the next. The concept of the *social relativity of digital inequalities* is proposed, postulating that digital exclusion depends on how an individual perceives relevant others' attitudes towards and use of ICTs in particular contexts.

Background

Research into digital inequalities has moved from fairly simple understandings of digital divides in terms of access, to a more nuanced understanding of digital exclusion as multi-faceted consisting of access, literacy and participation through Information and Communication Technologies (ICTs) and embedded in traditional inequalities (Van Deursen & Helsper, 2015). Nevertheless, when explaining why certain people are less likely to engage fully with ICTs, individual characteristics are often taken as the start and end point of analyses. This assumes that stable, personal features such as socio-economic circumstances or household characteristics consistently influence how individuals engage across different contexts. Even in research that focusses on the adoption of technologies in everyday life, the processes that drive adoption of ICTs by individuals within households are often without clear theorization of how individuals influence each other, or how others, who are not part of the household unit, influence individuals within the household (Haddon, 2011; Katz & Hampton, 2016). The causes of digital inequalities are seen as either coming from macro-level structural constraints which lead to inequalities between socio-economic and cultural groups or deriving from individual micro-individual level factors such as personality and skills.

These approaches ignore that people's everyday lives are socially contextual and fluid rather than individual, societal and static (Howarth, Campbell, Cornish, Franks, Garcia-Lorenzo, Gillespie, Gleibs, Goncalves-Portelinha, Jovchelovitch, Lahlou, Mannell, Reader & Tennant,

2013). By failing to incorporate these ideas of contextuality, digital inequalities research ignores social inequalities theory and research which shows that an individual's ability and drive to overcome disadvantage is subjective rather than objective, dependent on immediate social contexts and, thus, variable within the individual and over time.

Relative disadvantage exists when people perceive themselves to be (unjustifiably) disadvantaged or different in comparison to others in a certain situation. This idea should be considered in understanding digital inequalities since it is likely to influence whether a person feels they can or need to engage with ICTs at a certain point in their life. This paper asks what researchers can learn and incorporate from Relative Deprivation Theory (RDT) to further understanding of digital inequalities and how exclusion varies for individuals across different contexts.

Relative Deprivation

Before explaining how RDT can be applied to digital inequalities research, this paper will discuss the main arguments of this theory which has a long history of development within sociology, social psychology and economic disciplines.

Absolute versus relative deprivation

In recent research on social inequalities, exclusion is often seen as relative. That is, whether a person is excluded depends on what counts towards inclusion in the society a person is in at a particular moment in time (Atkinson, Cantillon, Marlier, & Nolan, 2002; Bossert, D'Ambrosio, & Peragine, 2007; Chakravarty & D'Ambrosio, 2006). The idea of relative versus absolute inequality can be illustrated by looking at how economists have measured wealth. For example, the Gini coefficient considers that whether someone is rich depends on how rich the others are in a country, while GDP is a decontextualized measure of wealth based on the absolute income of a country (Piketty, 2014). Another application of this idea of relativity can be found in the economic indicator of purchasing power; the affordability of the 'Basket of Goods and Services'. Whether someone is

resource rich depends on how easily they can afford the goods and services that are considered fundamental to survival in a society at a given point in time. The goods and services in this basket might change from year to year and are different in different countries. Therefore, these are relative depending on what is considered necessary for participation in a particular society at a particular time. This relative indicator is used to “...*avoid potential biases that might otherwise develop over time - for example, due to the development of entirely new goods and services, or the tendency for consumers to move away from buying goods and services*” (Gooding, 2014, p.2).

Objective versus subjective inequalities

RDT emphasizes *subjective* relative deprivation because research shows that for people to take action against inequality there has to be a difference (i.e. objective relative deprivation) but, more importantly, this difference has to be seen as problematic by an individual (i.e. subjective relative deprivation) (Crosby, 1976; Smith & Pettigrew, 2015). Relative deprivation as understood within RDT goes beyond objective relative deprivation and cognitive process of comparison and includes a clear affective component - a feeling of frustration with a lack of resources (Ellemers, Wilke, & Vanknippenberg, 1993; Tougas & Beaton, 2002). Of course “... *individuals must perceive that other persons possess a desired object or state before they will feel resentful about not possessing it personally*” (Olson, Buhrmann & Roese, 2000, p. 392).

RDT scholars have shown the importance of *value expectations*, *legitimacy* and *capabilities* for objective deprivation to translate into relative deprivation (Ellemers, 2001; Gurr, 1970; Runciman, 1966; Walker & Smith, 2011). If the resources from which one is excluded are not considered relevant or desirable, that is they have low *value expectations*, then no attempt will be made to compare the personal situation with that of another. *Value legitimacy* refers to whether different outcomes for different individuals are considered acceptable based on the norms and values that people have in relation to the unequal distribution of resources (Davis, 1959; Janmaat, 2013). *Capability and feasibility* refer to a person’s evaluation of the likelihood of change in the unequal

distributions of resources and whether these are possible through individual or collective action (Crosby, 1976; Runciman, 1966; Walker & Smith, 2011). A feeling of deprivation and, therefore, the intent or desire to change the situation is not present if a person thinks they should not or definitely cannot obtain a resource, or if they believe they definitely will obtain a resource without any action (Gurr, 1970; Janmaat, 2013; Runciman, 1966). The above classification of disadvantage into absolute and relative and objective and subjective can be summarized as follows:

[INSERT TABLE 1]

In other words, discussions around relative deprivation and social inequalities consider the absolute lack of resources, relative disadvantage and the cognitive and affective evaluations of this relative disadvantage to be fundamental in understanding and changing situations of inequality through bottom up or top down interventions.

Referents and social contextuality

From the previous follows that feelings of deprivation are socially contextual, depending on who the person uses as a comparator; the referent (Folger, 1987). Evaluations of which differences are fair and how outcomes and effort are related to each other for different people are learned through socialization in everyday contexts (Burchardt, 2005; Folger & Kass, 2000). RDT relies here on Social Identity Theory (SIT) components of Social Comparison Theories (SCT). SIT argues that, before any individual judges the situation they are in, they form an image of who they are and how that version of themselves is linked to norms and patterns of behavior. This is a socially constructed identity; social and physical circumstances drive individuals to see themselves as either primarily unique individuals or as part of a wider social group (Abrams, Hogg, & Marques, 2005; Hogg & Reid, 2006; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). The conditions under which social comparison is likely to take place include a cognitive process, that involves awareness of the other, and an affective component, that relates to the relevance of the resource and of the other in the specific area of the comparison to be made (Tajfel & Turner, 1986). The other or referent is also

categorized as either part of a wider social group or a unique individual and this influences what are perceived to be the explanations for their behavior and their access to resources. Referents in RDT can be actual others (individuals or groups) or expectations stemming from how we imagine our past or potential future selves (Levine & Moreland, 1986). Table 2 shows a classification of different types of self and referent perceptions in comparisons that involve situations of inequality or relative deprivation.

[INSERT TABLE 2]

For concrete every day activities we are more likely to engage in egotistical, interpersonal (b in table 2) rather than fraternalistic, intergroup comparisons (h in table 2). Comparisons can be with close or distant others. Meso-level, close interpersonal comparisons (with friends and family) are more likely than meso-level distant interpersonal comparisons with more distant others (e.g. colleagues or acquaintances) and far more likely than wider macro-level intergroup comparisons (i.e. with broader social groups) (Walker & Pettigrew, 1984). This echoes social network theory based research which shows that proximity and homophily are determinants of dense, high frequency interaction networks (Kadushin, 2012; Lin, 2002; Rainie & Wellman, 2014).

Burchardt (2005) emphasizes temporality as well as social contextuality: "An individual's reference group may change over time, either as a result of individual mobility, or as a result of changes within the group" (p.62) The issue of temporality also appears in Alicke's (2000) argument that subjective, comparative deprivation as a driver for motivation and behavior is especially important in novel or unfamiliar situations. This non-static view of relative deprivation is based in SIT which argues that people shift how they see themselves and others from situation to situation (Abrams & Hogg, 2006; Hogg, 2000; Turner et al., 1987). Understanding the conditions under which comparison takes place (i.e. novel, everyday situations) and who possible referents are, leaves one important aspect unexplained. Walker and Pettigrew argued that RDT "...shares a basic problem with social evaluation theories generally - the problem of predicting [which] referent people will use for comparison [in a particular situation]" (1984, p.308).

Similarity, proxy and counterfactual referents

Further integration of SCT into RDT aimed to overcome the lack of predictive power in relation to choice of referent by formulating the conditions of comparison more stringently. This led to the formulation and testing of the *similarity hypothesis*. This hypothesis states that if a person is in a situation where they are going to use others as a referent to judge their own ability to access resources, they are likely to choose someone who is of similar ability and opinion to them (Arnelsson & Smith, 2000). The *proxy referent* is a similar other whose experience can inform judgments of our own ability to overcome a situation of disadvantage. Asgari et al.(2010) argue that “...successful others change self-perceptions only when people feel psychologically connected to those individuals based on subjective identification, similar interests or attainable achievements.” (p. 204). Whether this is a specific individual (i.e. interpersonal comparisons) or a group (i.e. social comparison) depends on how the person has interpreted the context for comparison. The proxy can be similar because they are close to someone in individual personality and general ability or because they are part of a social group whose stereotypical abilities are considered relevant to a particular task. For example, someone might believe that gender is a good predictor of literacy. In the evaluation of their own writing skills, they will compare with others of the same gender and are less likely to compare themselves with those of a different gender who they engage with on an everyday basis. Lateral comparison, with those who are similar and close, is especially relevant “...where an individual confronts a novel task of some consequence. The undertaking of such a task would be effortful and failure costly” (p. 67, Martin, 2000). The proxy’s purpose is not primarily to form an image of our current situation as disadvantaged or not but to determine whether we can improve our situation (Wheeler, Martin, & Suls, 1997). If someone similar to us does well after they took action (e.g. they got training) or something happened to them (e.g. they got older and wiser), this boosts our belief that we can do it as well or that our circumstance can change. Within SCT, the most effective comparisons, when it comes to establishing subjective relative deprivation, are formulated as lateral upwards (with similar others of slightly higher status) comparisons. Asgari et

al. (2010) showed that it is indeed long term interactions with similar others that drive similarity comparisons. Recent research with disadvantaged individuals that use social capital and network theory to predict who people are likely to socialize and interact with shows their networks are predominantly made up of strong ties (Buchanan & Tuckerman, 2016; DiMaggio & Garip, 2012). By observing the behavior of these familiar, close others, individuals learn which outcomes are (un)achievable. This sense of agency or self-efficacy established through social learning is fundamental to taking action, without which individuals give up, believing that they have no power or will not be able to acquire the ability to instigate change (Bandura, 1986, 2001; Zimmerman, 2000).

Crosby's (1976) original description of the process underlying objective deprivation leading to relative deprivation as defined by RDT is still one of the clearest: "an individual feels resentment about failure to possess something only when she 1) sees that *similar* others possess it, 2) she wants it, 3) she feels entitled to possess it, 4) she thinks that possession of it is feasible, and 5) she does not blame herself for her failure to possess it." (adapted from Crosby, italics added, 1976, p.85 -90). The last point (5) is important for relative deprivation to lead to collective action instead of individual action being taken to overcome disadvantage.

Change through individual or collective action

Understanding whether the approach to a situation of inequality is based on individual or social perceptions of the self and the referent is key, since interpersonal deprivation and group related comparisons of deprivation lead to different outcomes in terms of motivation and actions taken to overcome inequalities (Ellemers, 2001). Ellemers et al. (1993) describe how, when disadvantage is accepted as an issue that affects a group (i.e. fraternalistic reference framework), improving the situation is seen as a group responsibility requiring collective action and, when a person considers disadvantage an individual (i.e. egoistic reference framework) issue, they perceive it to be a personal responsibility requiring private action. Egoistic framing of deprivation (a/b in table 2),

therefore, leads the disadvantaged and those trying to help individuals overcome this situation, to assume that any solution to difference and inequality should be based on individual action. In contrast, fraternalistic framings of deprivation (g/h in table 2) emphasize structural causes and position societal or community action as the solution to diminishing inequalities. Mummendey et al (1999) demonstrated how interventions using an egoistic framing of deprivation were negatively related to seeing a lack of resources as problematic and in need of change, whereas collective strategies resulting from fraternal framing of deprivation related strongly to negative feelings of deprivation and action for change. It is thus problematic if interventions and awareness campaigns focus on changing individual interests, skills and resources as the main pathways to counter inequality, since individuals are less likely to feel that disadvantage is unacceptable as exclusion is a matter of personal ability, choice, responsibility and, most importantly, effort.

Applying Relative Deprivation Theory to Digital Inequalities

Digital inequalities researchers have studied how people's socio-demographic characteristics are related to digital exclusion. In the often individualistic, top down solutions to tackle issues of digital inequalities, the everyday (social) routines from which individuals come to these formal settings are rarely considered (Eubanks, 2011). Unlike RDT scholars and practitioners, digital inequalities researchers have not systematically looked at what determines if people consider themselves excluded in the first place and whether objectively disadvantaged individuals subsequently feel that this is something they can or should do something about. There is digital inclusion research that recognizes that social context influences individual digital exclusion but there is little to no theorization about the processes of the influence of immediate, changing social context on individuals' experiences and actions in relation to digital inequality. Looking at the individual in the abstract, as isolated agents, is common in digital inclusion research and interventions, especially in those using theories of reasoned action (Fishbein, 2007; Wirth, von Pape, & Karnowski, 2008). Therefore, an important contribution RDT can offer the study of digital inequalities is that it forces

researchers to examine how decision making and opinion formation around a person's own engagement with ICTs take place in informal settings at home, at work, schools or when out and about. Domestication and ecological approaches do incorporate these environments into theorizing digital engagement but do not look closely at how changes in these environments and the people in them influence people's ICT perceptions and behaviors (Haddon, 2011; Katz & Hampton, 2016). RDT means examining not just who surrounds digitally excluded individuals, but also how disadvantaged individuals compare themselves to others as they go about in their daily lives, and how these referents inform their perceptions of the value of ICTs and their (dis)connections with the digital world.

Absolute versus relative digital exclusion

Digital inequalities researchers have examined what kinds of access a person has, which skills they possess, what their level of literacy is, to what extent they use certain types of digital content and what the tangible impacts on their everyday lives are of this (dis)engagement (e.g. DiMaggio, Hargittai, Russell Neuman, & Robinson, 2001; Helsper, 2012; Van Deursen & Helsper, 2015; Van Dijk & Van Deursen, 2014). Most of this focusses on absolute deprivation, with fixed levels of connection speed, skill or engagement as an indicator of digital inclusion. In light of how fast the internet changes in all these senses, this is an oddly static approach and likely to lead to policies and interventions that become obsolete the moment they are introduced. Therefore, the first way in which RDT is relevant to digital inequalities research and practice is in offering a way to make a distinction between absolute and relative levels of exclusion. The difference between absolute and relative objective digital exclusion can be understood as follows: absolute digital deprivation is when a person does not reach a certain level of skill or engagement and relative deprivation is when their level of skill or engagement is below that of others. In a world where digital skills and engagement are fundamental for, for example, employment, it is not the absolute level but the relative level of skill or engagement that will make the difference for a person getting a job. If

everyone else is highly digitally skilled, a person with medium skills will have a hard time finding a job but in a society where people have lower digital skills, the person with medium skills is king. The same level of access, skills or engagement can thus indicate inclusion in one context and exclusion in another. Consequently, in a world that is increasingly and more complexly digital, a person whose digital resources stay the same will become increasingly excluded because to stay 'equally rich' they have to continuously increase these resources.

Objective versus subjective digital inequality

Anderson and Esposito (2014) argued that, in contexts related to non-finite, open ended resources such as a skill or opinion, a person's feelings about or interpretations of the situation, that is, relative subjective deprivation, become more important than absolute objective deprivation. Considering that most of the resources under discussion in the digital inequalities literature are of an open ended nature, it seems clear that the subjectivity and relativity of deprivation should be valuable in theorizing explanations or even just describing digital exclusion. Digital inequalities research has been better at looking at subjective aspects of digital exclusion than it has been at looking at relative aspects of exclusion. In the mostly qualitative, digital inequalities research that looks at subjective exclusion, researchers ask individuals whether they feel excluded from participating fully in society due to their lower access to or engagement with ICTs (Haddon, 2000; Selwyn, 2006). Their individual experience of exclusion is what matters and what is recorded. This is what in table 1 was labelled absolute subjective deprivation. However, subjectivity in RDT is more than a perception of the insufficiency of objective resources; it is not just the perception of deprivation but the perception that what one has makes one disadvantaged *in comparison with others*. This means that for people to care about their level of digital exclusion, they need to consider themselves to be disadvantaged in comparison to others in terms of their access, skills or engagement with ICTs *and* that this difference is problematic. Of course, for subjective relative disadvantage to be perceived there need to be objective digital inequalities as well.

Thus, not only should a person see that others are better positioned in digital societies, but they should consider digital resources important for their everyday lives and perceive that inequalities in these resources are unacceptable. Weaver et al. (2010) point out that in high diffusion societies the master narrative is that technology is good for you. However, the reality, according to Weaver et al. (2010) is that society constructs an image of ICTs based on the benefits they bring to certain groups which does not relate to the everyday needs and lives of those who are digitally excluded. Therefore, digital inclusion becomes something they have no reason to want, expect or be able to get. In this context, there is relative objective but not relative subjective deprivation.

To work through the full extent of the RDT model, it is useful here to refer back to its concepts of value expectancy, legitimacy and capability. If a person values digital resources as important (i.e. high value expectancy), they perceive themselves to have fewer digital resources than others (i.e. relative subjective deprivation), they consider this to be unfair or illogical (i.e. the difference is illegitimate) and they think they are able to acquire the digital resource (i.e. high capability), then they will be motivated to change the situation by getting better access, pursuing digital skills training or exploring new areas of digital engagement. This can be illustrated through Crosby's (1976) original framework using digital skills as an example. A person will feel frustration about their lack of digital skills and take action to change this situation only when they 1) see that a similar other possesses digital skills, 2) they value being able to participate in digital environments, 3) they feel that they should have the skills to be able to do that, and 4) they think that they will be able to acquire digital skills.

Referents and social contextuality

Subjective digital inequalities research has mostly been around the topic of self-exclusion or motivation (Reisdorf & Groselj, 2015; Van Deursen & Van Dijk, 2015; Van Dijk, 2005).

Motivations in this context are interpreted as coming from the personality or interests of the person which might be influenced by their socialization in different socio-cultural groups (Bussey &

Bandura, 1999). If we were to apply RDT to explanations of digital disconnect then it becomes clear that this focus on individual motivation is too narrow even when seen as influenced by societal norms. RDT postulates that there might be less consistency in how we evaluate our access, skills and engagement than micro-psychological or macro-sociological approaches assume. How we evaluate our situation depends on the immediate social context or, in RDT language, referents the person evaluates their 'digital situation' against. As referents change, a person's perspective of their position changes and, as a consequence, the likelihood that they will take action in a situation in which they are disadvantaged also changes.

While digital inclusion research has started to think about engagement with ICTs in less individualistic ways and participatory research has looked at subjective evaluations of the implications of being excluded, the idea of referents or comparators has been almost completely absent from theorization about digital exclusion. This might explain why some individuals are digitally excluded while they could relatively easily acquire access and skills to engage with ICTs or have these resources already but are not using them. There clearly is a motivation gap that has to be overcome (Reisdorf & Groselj, 2015) and this involves a person's perceptions about whether engagement is valuable. How they value engagement is likely to depend on what they see others around them do and how they compare their outcomes to those of these others, not just on their individual needs. Related ideas around personal networks have been applied at the macro level to describe digital divides (e.g. Barnett & Sung, 2005) and general individual attitudes and behavior (e.g. Valente, 1995), but are rarely used to predict individual acceptance of ICT (e.g. DiMaggio & Garip, 2012; Helsper & Van Deursen, 2014; Kraut, et al., 1998).

Similarity principle

The similarity principle in RDT could be particularly relevant for digital inequalities research. The motivation to change a situation of digital exclusion is likely to be stronger if a similar other has managed to acquire digital skills than if these skills are acquired by a dissimilar other. A proxy

is a better guide to the need and ability to engage than a dissimilar referent. Lateral comparisons do not necessarily bring motivation to engage if the proxy is less involved or similarly less expertly engaged with ICTs. Upward vertical comparisons are even less likely to lead to change motivations because the other is expected to be different (i.e. more engaged/skilled) and staying digitally excluded confirms the unequal status quo. Current digital inequalities research does not address or theorize this comparative element. Are those who are excluded comparing themselves with similar others at home, at work, their neighbors or with unknown others who are promoted as having gone online and improved their lives in public awareness campaigns? The latter might not be effective if the most likely referents are similar, close others (i.e. proxies) they interact with at the meso-everyday level and who are equally disadvantaged.

An example of how the idea of referents can be useful for digital inequalities research is by connecting Burchardt's (2005) argument, that the most common comparisons are interpersonal, with similar individuals people interact with on an everyday basis, to research findings that show that most interactions with and through ICT are embedded in homophilous personal networks which vary in terms of engagement and skill (Ellison et al., 2007; Mesch & Talmud, 2007). Particular individuals within these networks are more influential than others and definitely more influential than those outside those networks (Rainie & Wellman, 2014). This might explain why the digital champion and buddy systems set up in many countries with enthusiastic but dissimilar, unknown others are not always successful. These champions are seen as motivators to use ICTs for personal interest or needs and do not take into account that the digitally excluded individual will go home, to work or school where different, familiar referents are present who change the persons framework of thinking about themselves as needing and capable of engagement with ICTs.

Least is known about how people use themselves as *counterfactual* referents in situations of digital exclusion. These counterfactuals are an important concept in more recent RDT research and can be comparisons with a past self or comparisons with an imaginary (better) but (obviously) very similar self. When working with more severely digitally excluded, the question to ask might be:

“What would have to change in your life or you for you to think about going online or using the internet for XYZ?” or “Do you think you are better or worse off than you were a few years ago?” and, if worse, “Do you feel that your level of skill or use of the Internet might contribute to this situation?”.

Besides not looking at the comparative aspect of digital exclusion, digital inequalities research is also ignorant as to how people see themselves (i.e. as individuals or as part of a wider group) when they evaluate digital inequalities. The importance of social identity and group comparisons has been hinted at in research around digital inequalities, for example, when people of certain groups indicate that the reason for their exclusion is that they are just not interested, that the internet is not for people like them (Blank & Dutton, 2014; Helsper & Reisdorf, 2013; Selwyn, 2007). Individuals seem to indicate here that being digitally included is not what they as members of a group are supposed to be even when they are aware that this constitutes an inequality that takes away the opportunity to engage with others in a digital society. This has been observed in relation to gender and digital skill differences where professing to a lack of skill is considered more acceptable or even desirable for women reflecting observations about the normative gendering of agency through observation by social learning theorists (Bussey & Bandura, 1999; Robinson et al., 2015; Selwyn, 2007). In other words, if digital exclusion is the norm for proxies with whom we have long term interactions, a digitally included individual will not consider themselves to be deprived by this inequality and there will be no motivation to change the situation. A person might feel that inequalities are acceptable or even normatively desirable in a particular situation (DiMaggio & Garip, 2012). This approach acknowledges that the way we see ourselves is context dependent and temporal, that is, how we see ourselves, our values, and our possibilities to take action depends on a particular situation and on who is available (cognitively and/or physically) as a referent.

Change through individual or collective action

Most digital inequalities research has implicitly assumed that exclusion is overcome by changing personal knowledge, skills, interests or motivation. Research based on this type of framing measures individual characteristics: access, digital skills, motivations and ways to engage. This type of individualistic framing is defined by RDT as the egotistical route to comparison. If a person is not engaged this has to be because their individual lack of skill or they as individuals do not find any value in ICTs. The more sociological approach sees these individual skills and motivations as structured by societal forces that prevent them and others like them from taking up the benefits of being online. Nevertheless, the operationalization of these macro influences on micro processes still is based on measuring individual digital exclusion levels and associating these with socio-demographic characteristics of the individual. For example, individuals with lower levels of education have on average lower levels of skill. To motivate these individuals to take courses to increase their skill levels, campaigns for these groups focus on the importance of digital skills in creating opportunities for the individual. Due to their egoistic (i.e. individualistic) framing of the problem, these campaigns logically do not create awareness that this digital disadvantage is very prominent in people who, like them, have lower levels of education and that it is thus linked to (unjust) traditional inequalities. RDT research has shown that egoistic framings of deprivation are less likely to lead to structural, long term change if everyday practice and experiences are not linked to social group inequalities (Mummendey et al., 1999). Digital inequalities research shows that there are stark group based differences in access, skills, motivations to engage, and in the tangible outcomes that people get from engagement (Van Deursen & Helsper, 2015). However, it is less clear whether there might be meso-community processes that could lead to structural changes in digital inequalities and whether sustainable change can come at that level. That is, we do not yet know in which ways outrage at how the unequal distribution of digital resources disadvantages a particular community could lead to collective calls for action. We have seen this in practice in relation to infrastructure but not yet in relation to skills or the availability of content which allows people to achieve tangible beneficial outcomes.

It is not that stakeholders are not aware that digital exclusion is a structural social issue that disproportionately disadvantages certain groups. However, very few of the policy documents or stakeholder interventions explicitly discuss the injustice (rather than the objective disadvantage) of being excluded from the digital space and do not see the responsibility of making sure people have equal opportunities to engage with technologies as a collective responsibility beyond providing infrastructure. It is indeed easier to imagine collective responsibility and fairness in relation to concrete resources such as access. Recent discussions around making access to digital content and literacy a human right reflect these ideas but we are yet to see them implemented in practice at the community or everyday level (Livingstone & Bulger, 2014; Wicker & Santos, 2013). The large majority of interventions and training continue to be focused on individuals in isolation from their everyday family, friends, work and other social contexts.

Theory and Research: Practical Implications

In suggesting that scholars and practitioners working in the area of digital inequalities should familiarize themselves with Relative Deprivation Theory (RDT), this paper does not argue that research should solely focus on subjective relative deprivation. Inequality scholars have long argued that the only way to approach complex issues like this one, is through a multi-dimensional understanding of disadvantage (Atkinson, et al., 2002; Burchardt, 2005; Fahey, 2007; Li, Savage, & Pickles, 2003). Any good conceptualization and empirical research of digital inequalities should include absolute and relative digital exclusion as well as objective and subjective digital exclusion. Research evidence gathered for policy making and interventions often tries to establish which speed or what kind of (technical) skill individuals should master to be included. Leading to a constant game of catch up, readjusting goalposts when the digital environment changes. Taking a relative approach to inequalities will force researchers and the policies based on the empirical evidence these collect, to adapt a language of optimal speeds for the essential digital activities and transferrable skills needed for lifelong learning and participation in changing social and digital landscapes. Current research has led to a wealth of information about which socio-demographic

groups are more likely to be excluded in terms of access, skills and engagement but what is lacking are explanations of why or how individual positions might change. Similarly we still do not really understand why high speed access and technical skills training does not lead to increases in engagement for a significant number of the digitally excluded, nor why certain individuals are digitally engaged against the odds. .

What RDT research brings to the foreground is that, to understand what drives digital disengagement, researchers and practitioners interested in tackling it should focus not just on the individual resources and the macro-structures or societal factors that lead to digital deprivation but pay attention especially to the meso-level factors. A person's everyday experiences and relationships determine relative and subjective deprivation, which motivates individuals and communities to change a situation of objective relative deprivation or demand that something is done to tackle inequalities. Interventions that want to generate change need to understand real inequalities (objective relative deprivation), the cognitive (the person's evaluation of these objective differences) *and* the affective components (the person's feelings about the value and acceptability) of their digital exclusion.

Walker and Pettigrew commented in 1984 in relation to RDT that "To progress, however, to the study of social phenomena while retaining individualistic concepts is to risk the classic ecological fallacy. To avoid such reductionist explanations of social phenomena, the [Relative Deprivation] concept itself must be social." (p.305) Like RDT digital inequalities research risks methodological individualism, even if it refocuses on social comparative processes. The methodologies applied take the individual as the unit of analysis. Digital exclusion is likely to be strongly based in a subjective evaluation of an individual's situation, a subjective evaluation that depends on which others are present or relevant at that moment in time. Subjectivity, even if it has its home in the individual is not individual; it is socially constructed. This is even more the case for something like digital literacy or different types of engagement with ICTs which are not concrete, finite goods or

resources. Instead these are more abstract resources for which there is no clear level to indicate absolute inclusion (Alicke, 2000).

Digital inequalities research should examine which individuals are central to and have long term engagements with the excluded individual and which norms, behaviors and opinions are constructed around ICTs within different group or relationship contexts. Knowledge is needed about a person's long term social, everyday environments before researchers can understand who digitally excluded individuals compare themselves with to decide in different situations whether they are deprived or not and whether individual or collective action should be taken to change the situation (Asgari, et al., 2010; Wedell & Parducci, 2000). Digital inequalities researchers should examine who common referents are for the digitally excluded. Perhaps changing referents can lead to a person seeing themselves differently in relation to technology and making disengagement important, less acceptable and in their power to overcome by either individual or collective action. To rethink how we might design research, Hopkins' (2008) 'contexts of practice' is a useful concept because it forces researchers and practitioners to focus on contexts as locations 'where things happen', where different macro-social and micro-individual factors come together, and thus implies an everyday dynamic social instead of an individualistic approach. Developing non-contextual and non-individualistic but scalable methodologies to research digital inequalities is of the utmost importance; policy makers and practitioners will have to deal with the complications of designing programs for a phenomenon like digital exclusion determined by complex social systems in flux and they need the right kinds of frameworks and evidence to be able to do this. They need to understand not only the personal barriers that come out of individual needs or macro-level economic or socio-cultural hurdles but also what the impact of different immediate social, everyday environments is in supporting or hindering further effective and valuable engagement with ICTs.

Digital inequalities research suffers from not considering how a person's reference framework for self-perceptions, opinions and behaviors around exclusion might shift between different social contexts. Evaluations are done in one off or annual surveys and rarely look at changes in the same

individual across different contexts, focusing on more abstract and general evaluations of access, skills and engagement. Developing theories and methods that can account for both continuity and variability of an individual's Relative Digital Deprivation is fundamental to aid the development of interventions that might create a more equal digital society. It might be able to account for a situation encountered currently where people acquire digital resources in one context, such as during a digital skills course at a tele-center, but do not carry this over to another context, such as the home. The everyday environment, the norms, values and behaviors of meaningful similar others might be the key to making acquired digital resources and engagement sustainable over time in a variety of contexts.

Conclusions

This paper argues that Relative Deprivation Theory (RDT) gives digital inequalities research new principles for theorizing digital exclusion and designing research that might help those who need it most to be able to take up the opportunities available in a digital world. The Relative Digital Deprivation Theory (RDDT) I propose here hypothesizes that objective inequalities lead to subjective relative exclusion and, therefore to individual or collective action for change, when the following five elements are in place:

- 1) an (objectively) excluded individual is aware of a relevant other in their everyday life with a different level of digital engagement;
 - 2) the opinions or behavior of this other show that there is clear value in connecting;
 - 3) the other (an individual or a social group they belong to) is similar enough (a proxy), indicating that the excluded person herself could also gain from connecting;
 - 4) the digitally excluded individual feels that they are able to acquire the resources to connect in ways that are valuable to them;
- and, for collective action to occur,
- 5) the digitally excluded individual feels that the inequality they suffer is illegitimately bound to a social group to which they belong.

Thus, for change to occur, an individual compares herself with people in everyday environments who are similar to her on all but a few characteristics and who are clearly reaping the benefits from digital inclusion. The counter point to this is that if people are surrounded by others like them who do not see or obtain the value of digital resources such as access, skills and engagement, they are unlikely to see their own digital disengagement as problematic. It does not matter in this case that other more distant, less familiar communities or individuals within the same society are digitally skilled and engaged and reaping the benefits of digital engagement. This paper is a call to action for researchers to understand who digital referents are, how they influence individuals' ICT perceptions and behaviors, and whether these change across contexts and over time.

A more normative question should also be posed based on RDT: whether an individual or egocentric focus in both research and evaluation of policy impact might have led to seeing the individual as responsible for their own exclusion and overemphasizing changing individual skills or interests as the most important drivers to overcome digital inequalities? Similarly, a focus on static, abstract structural and socio-technical causes of inequality might rob the digitally disengaged of any individual or collective agency for change and lead to top down interventions. If the social context is important and if this context changes over time and in different situations; community or collective based approaches focusing on the norms and values surrounding digital engagement in different contexts might be more productive, giving individuals agency to (demand) change. If the focus can be shifted to situations that emphasize collective responsibility and the value of everyone being included, instead of just the benefits for the individual, collective action might be taken across different social contexts (e.g. policy making, organizations, clubs, businesses) to tackle inequalities in this area.

This framework, which can be labelled the *social relativity of digital exclusion*, fits inequalities in increasingly digital societies in particular because the resource of which an excluded individual is deprived (i.e. digital engagement) is ubiquitous and valued in society. Using RDDT enables digital inequalities researchers to incorporate an understanding of how individuals and communities come

to (de)value ICTs through a process of everyday comparisons and how they make decisions about taking action or remaining passive in overcoming situations of digital disadvantage. This could be the missing link in explaining why individuals who ‘objectively’ have the resources to participate in and contribute to a digital world do not want to or do not perceive themselves as able to do so.

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Table 1 Classification of 'wealth' based on Relative Deprivation Theory (RDT)

	Objective	Subjective
Absolute	What I have	What I feel about what I have
Relative	What I have in comparison to others	What I feel about what I have in comparison to others

Table 2 Schematic of possible referent comparisons

		Referent			
		Past/Future Self	Other Individual	In- group	Out- group
Self- perception	Individual self	a	b	c	d
	Egotistical				
	Social self	e	f	g	h
	Fraternal				

Source: Adapted from Walker and Pettigrew (1984)